

# Health & Safety *Report*

Worker Health and Safety Branch

HS-1723

## **OVERVIEW OF THE CALIFORNIA PESTICIDE ILLNESS SURVEILLANCE PROGRAM REPORT**

**- 1993 -**

August 31, 1995

# Overview of the California Pesticide Illness Surveillance Program Report

The California Department of Pesticide Regulation (DPR) worker safety program, widely regarded as the most stringent in the nation, includes requirements for thorough data review of all pesticides<sup>1</sup> prior to registration for use in California, safety training of all pesticide handlers, and ongoing monitoring of people and the environment to detect potential for pesticide exposure. Mandatory reporting of pesticide illnesses has been part of this comprehensive program since 1971 (see "Background on the Reporting System", page 6). In a report issued in December 1993, the U.S. General Accounting Office noted that "California had by far the most effective and well-established monitoring system in place" and "the U.S. Environmental Protection Agency relies heavily on the pesticide illness data collected by the California monitoring system... and has tried to encourage selected states to develop monitoring systems modeled after the California system."

Investigations of all reported pesticide illnesses are provided by the county agricultural commissioners and evaluated by the Worker Health and Safety Branch (WH&S) staff. They are classified according to the circumstances of exposure to a pesticide and the likelihood that such an exposure would have resulted in the problem experienced. This often is difficult, and the results should be interpreted in light of the policies applied. For instance, it is DPR policy to record as a pesticide-related illness any adverse response to pesticide exposure, including headache or nausea in response to a foul odor. Consequently, an illness may be recorded as a "probable" instance of reaction to pesticide exposure, even when there is evidence that the primary toxic effect of the pesticide is *not* the cause.

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<sup>1</sup> "Pesticide" is used to describe many substances that control pests. Pests may be insects, fungi, weeds, rodents, nematodes, algae, viruses or bacteria -- almost any living organisms that cause damage or economic loss, or transmit or produce disease. Therefore, pesticides include herbicides, fungicides, insecticides, rodenticides, disinfectants, as well as insect growth regulators. In California, adjuvants are also subject to the regulations that control pesticides. Adjuvants are substances added to enhance the efficacy of a pesticide, and include emulsifiers, spreaders, and wetting and dispersing agents.

## 1993 Findings

During 1993, DPR received reports of 2,111 people whose health may have been affected by pesticide exposure. Figure 1 shows that over ninety percent of the cases provided enough information to evaluate, and that comparable numbers of cases were evaluated as definite, probable, possible and unrelated.

### Number of Cases Reported to PISP

1993

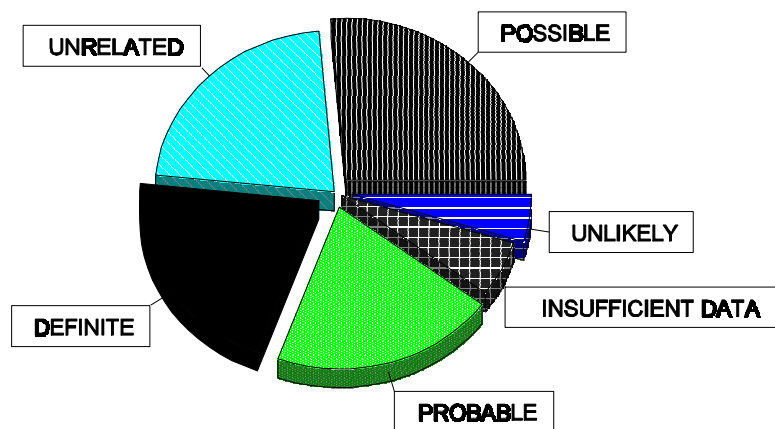


Figure 1. Total number of cases reported to the Pesticide Illness Surveillance Program, Department of Pesticide Regulation in 1993.

There was a substantial drop in 1993 in both the numbers of cases identified and those evaluated after investigation as definitely, probably or possibly related to pesticide exposure. Since 1982, the number of cases possibly, probably or definitely related to pesticide exposure (excluding antimicrobials) has ranged from 970 to 1,372. In 1993, only 853 were documented. Decreases were noted in virtually every category of incident.

Figures 2 and 3 (on page 4) represent the numbers of cases classified at least possibly related to pesticide exposure over a five-year period. In Figure 2, the totals are pre-

sented for agricultural vs. non-agricultural use of the suspect pesticide. Figure 3 represents the same totals subdivided into antimicrobial and other pesticides. Only 29 of the 582 antimicrobial cases were agricultural.

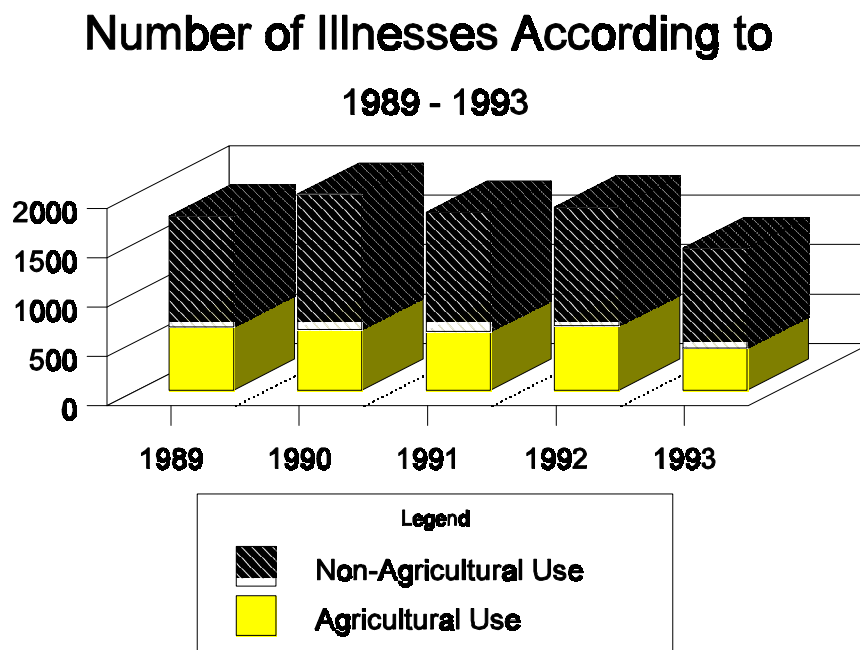


Figure 2. Comparison between the number of illnesses reported to PISP at least possibly related to pesticide exposure according to agricultural and non-agricultural use from 1989 through 1993.

Agricultural commissioners investigated 745 cases of illness or injury suspected of having been caused by antimicrobial exposure during 1993. This represents a modest decrease relative to the 783 investigated in 1992, 897 in 1991, and 975 in 1990. After evaluation, 582 were found possibly, probably or definitely related to antimicrobial exposure. This compares to 714 cases so classified in 1992, 766 in 1991, 847 in 1990, 782 in 1989, and 748 in 1988.

The number of people definitely, probably or possibly affected by pesticide residues in fields decreased to 117 in 1993, compared to an average of 168 from 1989 through 1992. Prior to 1989, the average number of field residue cases per year had been 279.

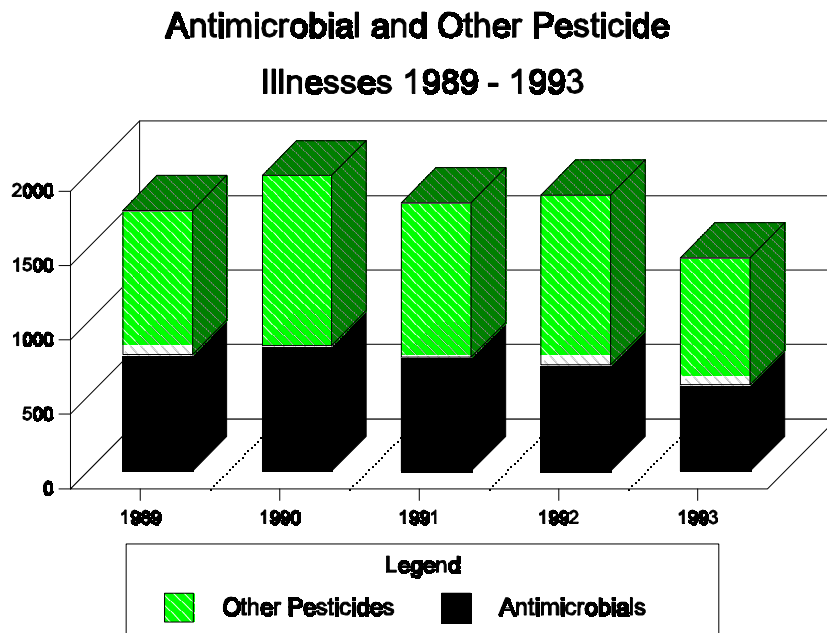


Figure 3. Number of cases reported to PISP at least possibly related to antimicrobial or other pesticide exposures from 1989 through 1993.

Reduction in the number of workers' compensation claims for all causes provides the most likely explanation of the drop. Occupational exposures (those that occurred while the affected people were at work) accounted for 1,307 of the 1,435 possible, probable or definite cases. As shown in Figure 4, the activities in which the people were engaged at the time of exposure indicated that at least half the cases resulted from exposure to pesticide that was being used. Most of the rest involved exposure to pesticide residue.

Three 1993 fatalities were investigated, only one of which, a suicide, was found to be related to pesticides. Non-fatal crashes of four aerial applicators were investigated, and none of them was found to be related to pesticide exposure. Children continue to be the victims of adults' failure to follow safe use instructions for pesticides. A landlord's excessive efforts to treat a home for termites appears to have resulted in the illnesses of two children who lived there. No explanation was available for a grandmother's mistaken administration of pesticide instead of cough syrup to her ailing grandchild, who recovered. Storing pesticides in containers without pesticide labels, however, is a common cause of such episodes.

## Occupational and Non-Occupational Pesticide Illnesses 1993

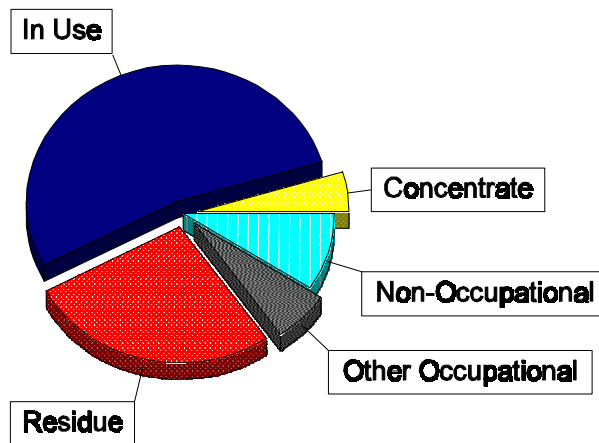


Figure 4. Cases reported to PISP at least possibly related to occupational (pesticide use, pesticide residue and concentrate exposures) and non-occupational exposure.

A more detailed summary or additional specific information on reports of pesticide illness and injury may be requested from the Worker Health and Safety Branch, Department of Pesticide Regulation, at 1020 N Street, Sacramento, 95814 or by calling (916) 445-4222.

## Background on the Reporting System

Under a statute enacted in 1971 and amended in 1977, California physicians are required to report any suspected case of pesticide-related illness or injury by telephone to the local health department. The health department informs the county agricultural commissioner, and also completes a Pesticide Illness Report (PIR), copies of which are distributed to the State Office of Environmental Health Hazard Assessment, to the California Department of Industrial Relations (DIR), and to the Department of Pesticide Regulation (DPR).

Because the required illness reports are not always provided, DPR's Worker Health and Safety Branch (WH&S) also reviews reports of worker illness and injury submitted to DIR under workers' compensation reporting requirements. Any report that mentions a pesticide, or pesticides in general, as a possible cause of injury is selected for investigation. Reports that mention unspecified chemicals also are investigated if the setting is one in which pesticide use is likely. Reliance on reports of illness and injury treated under workers' compensation results in a surveillance program that records primarily occupational exposures.

Despite the effort invested and the preeminence of the system, the completeness of the reporting system is an ongoing concern. People who do not consult physicians are unlikely to come to the attention of the system. The likelihood is very good, however, that people treated for acute illnesses under workers' compensation will be reported to DIR, where review by WH&S will recognize those cases in which pesticides are implicated. Although this should be sufficient to identify any serious problems with pesticide use, it limits the conclusions that can be drawn about the total number of people affected.

The agricultural commissioner of the county where the incident occurred investigates all cases, whether identified by direct physician reporting or by review of workers' compensation reports. DPR provides instructions, training and technical support for performing investigations. The commissioners prepare reports describing the circumstances in which pesticide exposure may have occurred and any other relevant aspects of the case. These reports are submitted to WH&S staff for evaluation and classification. If additional affected people are encountered in the course of an investigation, they are identified in the report and entered into the database.

The intention in maintaining these records is to document and evaluate the circumstances of pesticide exposures that result in illness and to evaluate the effectiveness of the DPR pesticide and worker safety regulatory programs, alerting regulatory officials to possible pesticide-related problems. Information from the database feeds back into the regulatory programs and is used to develop or support proposals for the California pesticide registration program and the U. S. Environmental Protection Agency's Label Improvement Program. Additionally, illness investigations focus attention of enforcement staff on sites where excessive exposures are suspected.